



## PATENT APPLICATION

Docket No. 13316/3293 (Formerly 2777/3293)

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of HASKELL Barin Geoffry et al.

Application No.: 10/812,062

Examiner: To Be

Filed: March 30, 2004

Assigned

IMPROVED TARGET BITRATE ESTIMATOR, For

PICTURE ACTIVITY AND BUFFER MANAGE-MENT IN RATE CONTROL FOR VIDEO CODER Customer No.: 23838

Group Art Unit: 2631

## SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

MAIL STOP AMENDMENTS Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR § 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. The filing of this Information Disclosure Statement and the enclosed PTO Form No. PTO/SB/08, shall not be construed as an admission that the information cited is prior art, or is considered to be material to patentability as defined in 37 C.F.R. § 1.56(b). It is believed that no fees other than those indicated below are due, but authorization is hereby given to charge any additional fees due, or to credit any overpayment, to deposit account 11-0600.

This Information Disclosure Statement is being filed (a) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. §1.53(d), (b) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, (c) before the mailing date of a first Office Action on the merits in the present application, OR (d)

Docket No. 13316/3293 Page 2

before the mailing of a first office action after filing of a request for continued examination. No certification or fee is required.

An English-language Abstract of non-English language reference 87 is attached hereto.

In references 136 and 156, the cited chapters of *Digital Multimedia Standards* and *Multimedia Systems, Standards, and Networks* are considered relevant. In order that the Examiner may note all chapters of these books, copies of the tables of contents are also enclosed. If the Examiner desires copies of any of the other chapters of these books, it is requested that he/she contact the undersigned.

In accordance with U.S. practice, copies of the U.S. references are not included. Copies of the following references are attached:

87-100	118	133	139	145	155
105	120	134	140	147	156.
108	125-127	136	142	148	
115	130	137	143	150	

Respectfully submitted,

**KENYON & KENYON** 

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PTO/SB/08a (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

JUL 0 8 2005 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE re required to respond to a collection of information unless it contains a valid OMB control number. Under the Paperwork Reduction Act of 1995, no

Substitute for form 1449A/PTO

Sheet

(Use as many sheets as necessary)

of

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Complete if Known Application Number 10/812,062 Filing Date 03/30/2004 First Named Inventor HASKELL, Barin Geoffry Art Unit 2631 Examiner Name to be assigned Attorney Docket Number 13316/3293

			U.S. PATENT D	OCUMENTS		
Examiner Cite No.1		Document Number  Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevar Passages or Relevant Figures Appear	
	1	US- 2,905,756	09/22/1959	Graham	<u> </u>	
	2	US- 4,245,248	01/13/1981	Netravali et al.		
	3	US- 4,394,680	07/19/1983	Watanabe		
	4	US- 4,717,956	01/05/1988	Moorhead et al.		
	5	US- 4,920,414	04/24/1990	Remus et al.		
	6	US- 4,958,226	09/18/1990	Haskell et al.		
	7	US- 4,999,705	03/12/1991	Puri		
	8	US- 5,001,559	03/1991	Gonzales et al.		
	9	US- 5,086,346	02/04/1992	Fujisawa		
	10	US- 5,116,287	05/26/1992	Hironaka et al.		
	11	US- 5,117,283	05/26/1992	Kroos et al.		
	12	US- 5,134,476	07/28/1992	Aravind et al.		
	13	US- 5,136,659	08/04/1992	Kaneko et al.		
	14	US- 5,170,264	12/08/1992	Saito et al.		
	15	US- 5,189,526	02/23/1993	Sasson		
	16	US- 5,194,941	03/16/1993	Grimaldi et al.		
	17	US- 5,196,933	03/1993	Henot		
	18	US- 5,214,507	05/25/1993	Aravind et al.		
	18	US- 5,214,721	05/25/1993	Fukuhara et al.		
	20	US- 5,227,878	07/13/1993	Puri et al.		
	21	US- 5,247,590	09/21/1993	Fukuhara et al.		
	22	US- 5,253,055	10/12/1993	Civanlar et al.		
	23	US- 5,253,056	10/12/1993	Puri et al.		
	24	US-5,270,813	12/14/1993	Puri et al.		
	25	US- 5,278,646	06/11/1994	Civanlar		
	26	US- 5,345,317	09/06/1994	Katsuno et al.		
	27	US- 5,408,328	04/18/1995	Boliek et al.		
	28	US- 5,414,469	03/09/1995	Gonzales et al.		
	29	US- 5,436,985	07/25/1995	Li		
	30	US- 5,454,051	09/26/1995	Smith		
	31	US- 5,465,119	11/07/1995	Demos		
	32	US- 5,467,136	11/14/1995	Odaka et al.		

Examiner Signature	Date Considered	

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. Applicant's unique citation designation number (optional). See Kinds Codes of USPTO Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute	for form 1449B/PTC	)			Complete if Known
INFORMATION DICOLOGUES				Application Number	10/812,062
INFORMATION DISCLOSURE				Filing Date	03/30/2004
STAT	STATEMENT BY APPLICANT			First Named Inventor	HASKELL, Barin Geoffry
				Art Unit	2631
	(Use as many she	ets as	necessary)	Examiner Name	to be assigned
Sheet	2	of	10	Attorney Docket Number	13316/3293

	U.S. PATENT DOCUMENTS								
Examiner Cite No.1		Document Number  Number - Kind Code² (if known)	Publication Date		Pages, Columns, Lines, Where Relevan Passages or Relevant Figures Appear				
	33	US- 5,473,376	12/05/1995	Auyeung					
*	34	US- 5,488,418	01/30/1996	Mishima et al.					
	35	US- 5,493,513	02/20/1996	Keith et al.					
	36	US- 5,500,678	03/19/1996	Puri					
	37	US- 5,524,024	06/04/1996	Lin					
18384	38	US- 5,532,747	07/02/1996	Yoon et al.					
	39	US- 5,539,468	07/23/1996	Suzuki et al.					
	40	US- 5,561,477	10/01/1996	Polit					
	41	US- 5,566,002	10/15/1996	Shikakura					
	42	US- 5,592,569	01/07/1997	Li					
-	43	US- 5,600,375	4/1997	Wickstrom					
	44	US- 5,619,591	04/08/1997	Tsang et al.					
	45	US- 5,659,490	08/19/1997	Imamura					
	46	US- 5,633,684	05/27/1997	Teranishi et al.					
	47	US- 5,699,117	12/16/1997	Uramoto et al.					
	48	US- 5,737,022	04/07/1998	Yamaguchi et al.					
	49	US- 5,748,789	05/05/1998	Lee et al.					
	50	US- 5,757,969	05/26/1998	Kim					
	51	US- 5,757,971	05/26/1998	Kim					
	52	US- 5,764,374	06/09/1998	Seroussi et al.					
	53	US- 5,764,805	06/09/1998	Martuci et al.					
	54	US- 5,778,097	07/07/1998	Nickerson					
	55	US- 5,781,665	07/19/1998	Cullen et al.					
	56	US- 5,786,855	07/28/1998	Chen et al.					
	57	US- 5,790,695	08/16/1998	Suwa					
	58	US- 5,812,197	09/22/1998	Chan et al.					
	59	US- 5,818,532	10/06/1998	Malladi et al.					
	60	US- 5,832,115	11/16/1998	Rosenberg					

Examiner Signature	Date Considered	
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<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at <a href="https://www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁵ Applicant is to place a check mark here if English language Translation is attached.

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Substitute	for form 1449C/PT(	)			Complete if Known
INFORMATION DISCLOSURE				Application Number	10/812,062
INFORMATION DISCLOSURE				Filing Date	03/30/2004
STAT	STATEMENT BY APPLICANT			First Named Inventor	HASKELL, Barin Geoffry
				Art Unit	2631
	(Use as many she	ets as	necessary)	Examiner Name	to be assigned
Sheet	3	of	10	Attorney Docket Number	13316/3293

			U.S. PATENT D	OCUMENTS	
Examiner Cite No.1	Document Number	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevan	
		Number - Kind Code <sup>2</sup> (if known)	MM-DD-YYYY	Cited Document	Passages or Relevant Figures Appear
	61	US- 5,835,149	11/10/1998	Astle	
	62	US- 5,850,294	12/18/1998	Aposolopoulos et al.	
	63	US- 5,852,473	12/22/1998	Horne et al.	
	64	US- 5,852,682	12/22/1998	Kim	
	65	US- 5,859,921	01/12/1999	Suzuki	
,	66	US- 5,881,180	03/09/1999	Chang et al.	
	67	US- 5,883,981	03/16/1999	Li et al.	
	68	US- 5,912,991	06/15/1999	Jeon et al.	
	69	US- 5,963,257	10/05/1999	Katata et al.	
	70	US- 5,966,468	10/12/1999	Fujimoto	
	71	US- 5,974,172	10/26/1999	Chen	
	72	US- 5,974,184	10/26/1999	Eifrig et al.	
	73	US- 5,978,509	11/02/1999	Nachtergaele et al.	
	74	US- 5,978,510	11/02/1999	Chung et al.	
	75	US- 5,999,189	12/07/1999	Kajiya et al.	
	76	US- 5,999,219	12/07/1999	Boon	
	77	US- 6,005,980	12/21/1999	Eifrig et al.	
	78	US- 6,026,183	02/15/2000	Talluri et al.	
	79	US- 6,055,623	12/21/1999	Takahashi et al.	
	80	US- 6,057,884	05/02/2000	Chen et al.	
	81	US- 6,097,842	08/01/2000	Suzuki et al.	
	82	US- 6,141,442	10/31/2000	Chen	\
	83	US- 6,148,026	11/14/2000	Puri et al.	
	84	US- 6,208,693	03/27/2001	Chen et al.	
	85	US- 6,233,356	05/15/2001	Haskell et al.	
	86	US- 6,459,732	10/01/2002	Chen et al.	

Examiner Signature	Date Considered	

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Traiscation is attached.

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Substitute	for form 1449D	/PTO			Complete if Known		
INFORMATION DISCLOSURE				Application Number	10/812,062		
				Filing Date	03/30/2004		
STAT	EMENT	BY A	PPLICANT	First Named Inventor	HASKELL, Barin Geoffry		
				Art Unit	2631		
	(Use as many	sheets as	necessary)	Examiner Name	to be assigned		
Sheet	4	of	10	Attorney Docket Number	13316/3293		

	FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No.1	Foreign Patent Document  Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> ( <i>if known</i> )	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T⁵		
	87	EP 0 283 715 A2	09/28/1988	ANT Nachrichtentechnik GmbH		Abs.		
	88	EP 0 400 756 A2	12/05/1990	N.V. Philips' Gloeilampenfabrieken Groenewoudseweg				
	89	EP 0 422 404 A2	04/17/1991	International Business Machines Corporation				
	90	EP 0 514 663 A2	11/25/1992	International Business  Machines Corporation				
	91	EP 0 517 256 A2	12/09/1992	Sony Corporation				
	92	EP 0 534 350	03/31/1993	Matsushita Electric Industrial Co., Ltd (JP)				
	93	EP 0 540 961 A2	05/12/1993	International Business Machines Corporation				
	94	EP 0 566 219 A2	10/20/1993	Canon Kabushiki Kaisha				
	95	EP 0 582 819 A2	02/16/1994	Sony Corporation				
	96	WO 94/27252 A	11/24/1994	Competitive Technologies, Inc.				
	97	EP 0 746 159 A2	12/12/1996	Matsushita Electric Industrial Co., Ltd.				
	98	EP 0 753 970 A2	01/15/1997	Sharp Kabushiki Kaisha				
	99	CA 2,168,641	03/28/2000	Kabushiki Kaisha Toshiba, JP				

Examiner Signature	Date Considered	
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Substitute for form 1449E/PTO		Complete if Known
INFORMATION DIGGLOOUDE	Application Number	10/812,062
INFORMATION DISCLOSURE	Filing Date	03/30/2004
STATEMENT BY APPLICANT	First Named Inventor	HASKELL, Barin Geoffry
	Art Unit	2631
(Use as many sheets as necessary)	Examiner Name	to be assigned
Sheet 5 of 10	Attorney Docket Number	13316/3293

	NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Include name of the author (in CAPITAL LETTERS), title of the article (when appropria the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), vol number(s), publisher, city and/or country where published.			
	100	CHEN, T., MPEG4 Video Verification Model VM 5.0, pages 2-192		
	101	FUKINUKI, T.; "Measurement of Movement and Velocity of Moving Objects with Picture Signals"; IE78-67; pages 35-41; Central Research Laboratory; Hitachi, Ltd.; Kokubunji, Tokyo, Japan, 185; and English translation		
	102	KOGA, T. et al.; "Motion-Compensated Interframe Coding for Video Conferencing"; IE81-54; pages 85-90, C&C Systems Research Laboratories; Nippon Electric Co., Ltd; and English translation		
	103	NONOMIYA, Y.; "Motion Correction for Interframe Coding Systems," IE78-6; pages 1-10; General Technology Research Institute; Nippon Broadcasting Association; and English translation		
	104	Web site material, "MPEG-4: A Flexible Coding Standard for the Emerging Mobile Multimedia Applications," http://www.tnt.uni-hannover.de/project/eu/momusys/docs/Paper/IST/pimrc/pimrc.html		
	105	COHEN et al., "Adaptative Differential Coding of Picture Signals Based on Local Contour Prediction," Communications and Knowledge, Partners in Progress, November 29, 30 - December 1, 1976, Dallas, Texas		
	106	PLOYSONGSANG, A. et al., "DCT/DPCM Processing of NTSC Composite Video Signal," IEEE Transactions On Communications, vol. COM-30, no. 3, pp. 541-549, XP002062314, ISSN: 0090-6778, 1 March 1982 (1982-03-01)		
	107	CHAM et al., "DC Coefficient Restoration in Transform Image Coding," IEE Proceedings, Vol. 131, Pt. F, No. 7, pages 709 - 713, December 1984		
	108	SEE et al., "Efficient Encoding of DC Coefficients in Transform Coding of Images Using JPEG Scherne," Signal Image and Video Processing, Vol. 1, No. Symp. 24, published 11/06/1991, Institute of Electrical and Electronics Engineers, June 11-14, 1991, pages 404-407, Singapore		
	KIM, J. W. et al., "A Transform Domain Classified Vector Quantizer for Image Coding,"  Transactions on Circuit and Systems for Video Technology, pp. 3-14, XP002115624, N 1992 (1992-03)			
	PURI, A., "Invited address: Video Coding Using the MPEG-1 Compression Standard," A Bell Labs, Holmdel, NJ, 1992 SID Int'l. Symposium Digest of Technical Papers, Society f Information Display, Playa del Rey, CA, May 1992			
	111	DE NATALE, F. G. B. et al.: "Adaptive DCT For Image-Data Compression," European Transactions on Telecommunications and Related Technologies, vol. 3, no. 4, pp. 359-366, XP000310681, ISSN: 1120-3862, 1 July 1992 (1992-07-01)		

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Examiner	Date	1
Signature	Considered	J

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance

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Substitute for form 1449F/PTO	Complete if Known	
INFORMATION DIGGL COURT	Application Number	10/812,062
INFORMATION DISCLOSURE	Filing Date	03/30/2004
STATEMENT BY APPLICANT	First Named Inventor	HASKELL, Barin Geoffry
	Art Unit	2631
(Use as many sheets as necessary)	Examiner Name	to be assigned
Sheet 6 of 10	Attorney Docket Number	13316/3293

		NON PATENT LITERATURE DOCUMENTS	
Examiner Cite No.1		Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
	112	KOK, C. W. et al.: "Image Coding Using DCT of Wavelet Coefficients," Proceedings of the IEEE-SP International Symposium Time-Frequency and Time-Scale Analysis (CT. No. 92TH0478-8), pp. 475-478, XP002115625 1992, NY, NY, IEEE, USA ISBN: 0-7803-0805, Victoria, BC, Canada, 4-6 Oct. 1992	
	113	TEST MODEL EDITING COMMITTEE, TELECOMMUNICATION STANDARDIZATION SECTOR, STUDY GROUP 15, EXPERTS GROUP FOR ATM VIDEO CODING (RAPPORTEUR'S GROUP ON PART OF Q.2/15), INTERNATIONAL ORGANISATION FOR STANDARDISATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO-IEC/JTC1/SC29/WG11 MPEG93/457, "Test Model 5," Draft, Document AVC-491, Version 1, Coded Representation of Picture and Audio Information, April 1993	
	114	PURI, A., "Video Coding Using the MPEG Compression Standard," AT&T Bell Labs, Holmdel, NJ, Visual Communications and Image Processing '93, Haskell <i>et al.</i> Chairs/Editors, Cambridge, MA, pages 1701-1713, Vol. 2094, Part Three, SPIE - The Int'l. Society for Optical Engineering, Bellingham, WA, November 8-11, 1993	
	115	INTERNATIONAL ORGANISATION FOR STANDARDISATION ORGANISATION INTERNATIONALE DE NORMALISATION ISO/IEC JTC1/SC29/WG11, N0702 (revised); Incorporating N0702 (revised), incorporating N702 Delta of 24 March and Further Editorial Corrections; "Information Technology — Generic Coding of Moving Pictures and Associated Audio Information: Video, Recommendation H.262"; ISO/IEC 13818-2; May 10, 1994	
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INFORMATION DISCLOSURE			OL OOUDE	Application Number	10/812,062	
				Filing Date	03/30/2004	
STAT	STATEMENT BY APPLICANT		First Named Inventor	HASKELL, Barin Geoffry		
				Art Unit	2631	
	(Use as many she	ets as	necessary)	Examiner Name	to be assigned	
Sheet	7	of	10	Attorney Docket Number	13316/3293	

	•	NON PATENT LITERATURE DOCUMENTS
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
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Subs	Substitute for form 1449H/PTO			Complete if Known		
		AN DIO	OL COURT	Application Number	10/812,062	
	INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	03/30/2004			
ST	STATEMENT BY APPLICANT		First Named Inventor	HASKELL, Barin Geoffry		
				Art Unit	2631	
	(Use as man	y sheets as	necessary)	Examiner Name	to be assigned	
She	et 8	of	10	Attorney Docket Number	13316/3293	

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INIEO	DMATION	DIOOL OCUBE	Application Number	10/812,062	
	<del>-</del>	DISCLOSURE	Filing Date	03/30/2004	
STAT	EMENT B	Y APPLICANT	First Named Inventor	HASKELL, Barin Geoffry	
			Art Unit	2631	
	(Use as many sh	eets as necessary)	Examiner Name	to be assigned	
Sheet	9	of 10	Attorney Docket Number	13316/3293	

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	Signature	Considered	J

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	D11 4 T10 11		01 001105	Application Number	10/812,062
-	_	_	CLOSURE	Filing Date	03/30/2004
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				Art Unit	2631
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